



UNIVERSITAT POLITÈCNICA DE CATALUNYA
BARCELONATECH

Escola Superior d'Enginyeries Industrial,
Aeroespacial i Audiovisual de Terrassa

STUDY OF THE BIM MODELLING PROCESS OF THE GAIA BUILDING'S HVAC SYSTEM

DRAWINGS

Treball realitzat per:

Marc Valiente Garcia

Dirigit per:

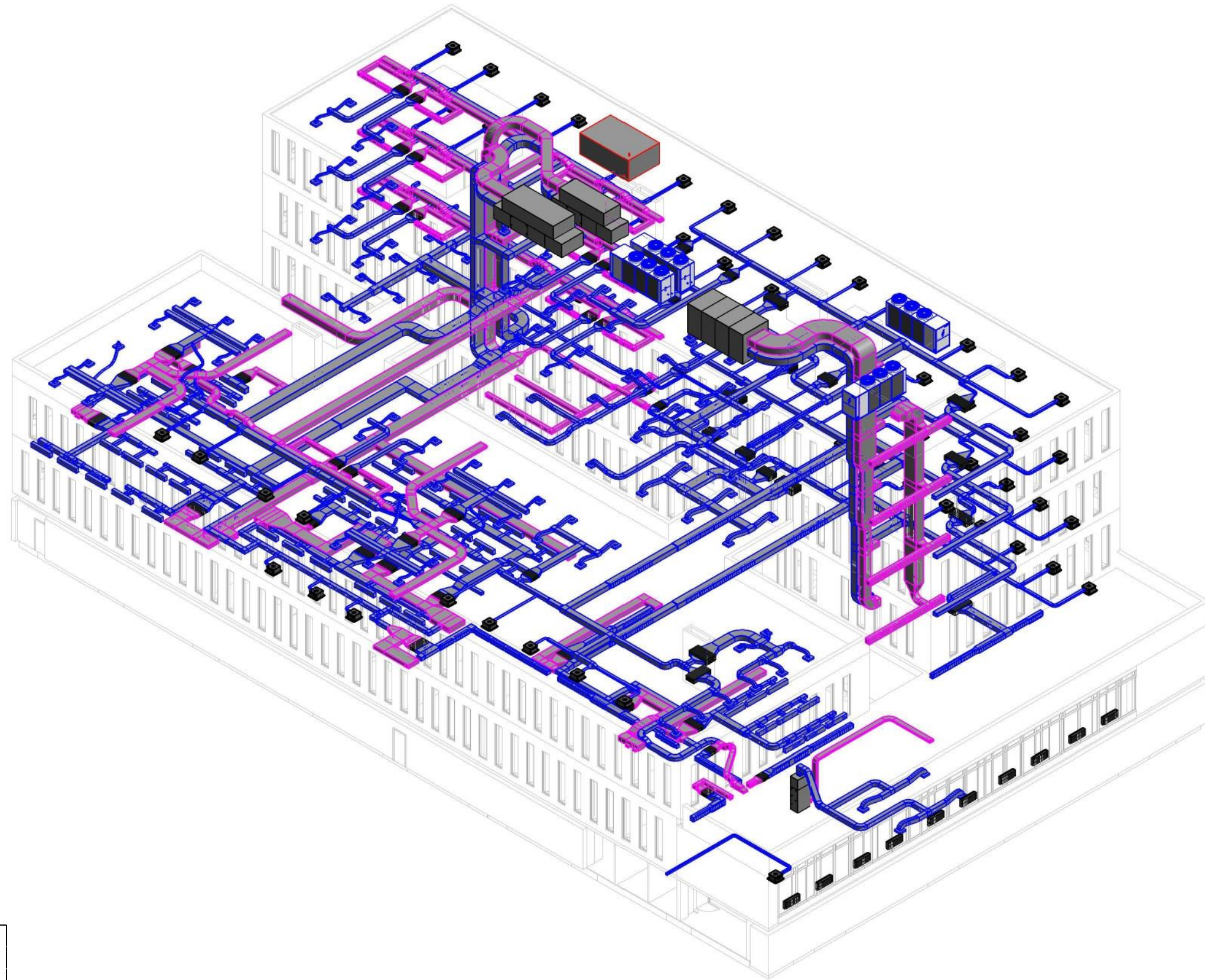
Nuria Forcada Matheu

Co-dirigit per:

Seyed Hamidreza Alavi

Terrassa, **Curs 2019-2020**

Grau en Enginyeria en Technologies Industrials



- IMPULSE AIR
- RETURN AIR



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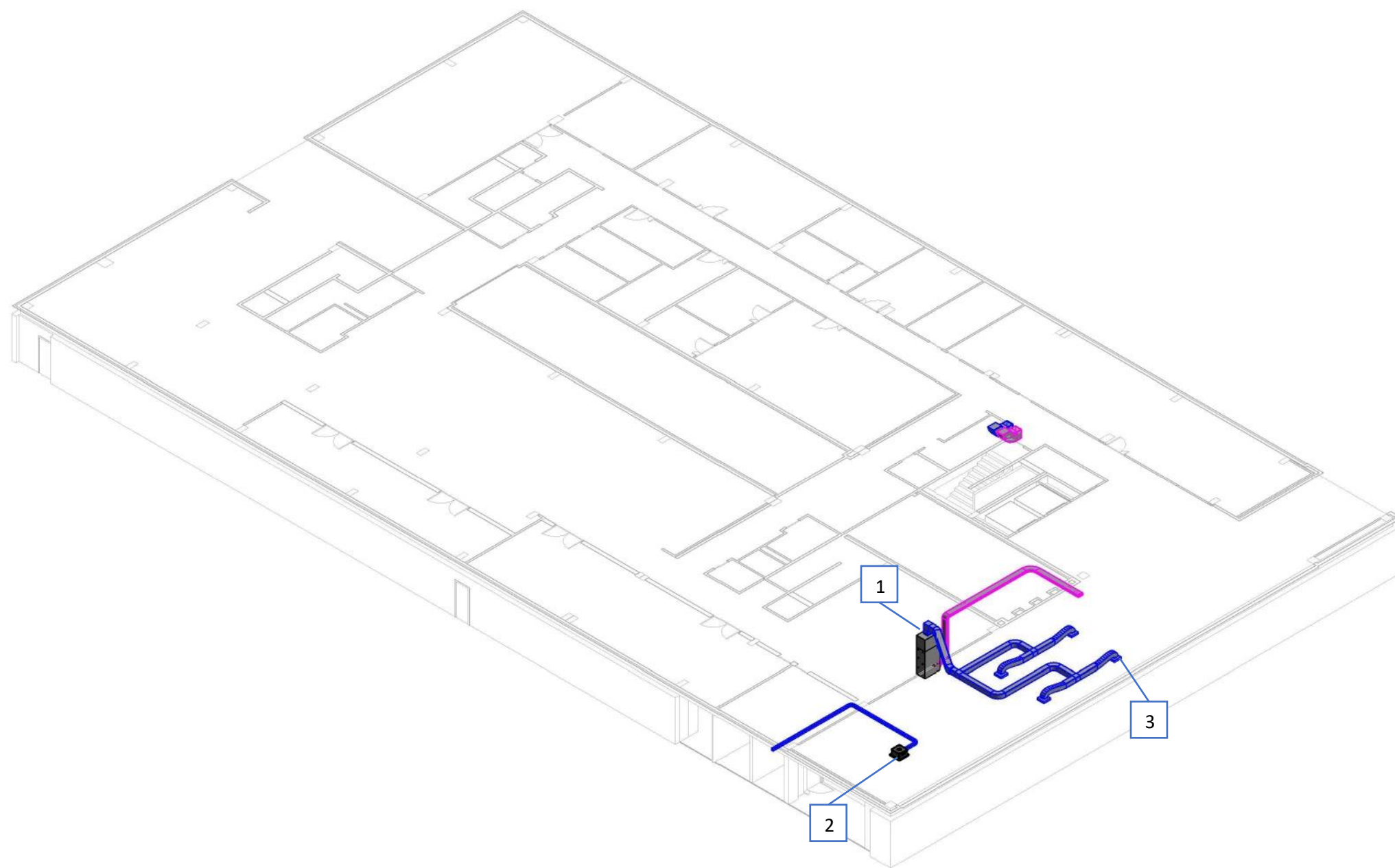
STUDY OF THE BIM MODELLING
 PROCESS OF THE GAIA
 BUILDING'S HVAC SYSTEM
 GENERAL VIEW OF THE AIR
 DUCT SYSTEM

AUTHOR
 MARC VALIENTE GARCIA

PLAN Nº
 01

DATE
 27/04/2020

SCALE
 A3 1:250



■ IMPULSE AIR	1 CTA-3 FAN COIL	1 unit
■ RETURN AIR	2 FCL84 CASSETTE	1 unit
	3 TROX VDW AIR DIFFUSER	4 units



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STUDY OF THE BIM MODELLING PROCESS OF THE GAIA BUILDING'S HVAC SYSTEM	AUTHOR MARC VALIENTE GARCIA	PLAN Nº 02	DATE 27/04/2020	SCALE A3 1:250
BASEMENT'S AIR DUCT SYSTEM				



■ IMPULSE AIR
■ RETURN AIR



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STUDY OF THE BIM MODELLING
PROCESS OF THE GAIA
BUILDING'S HVAC SYSTEM

BASEMENT'S AIR DUCT SYSTEM
– FLOOR PLAN

AUTHOR

MARC VALIENTE GARCIA

PLAN Nº

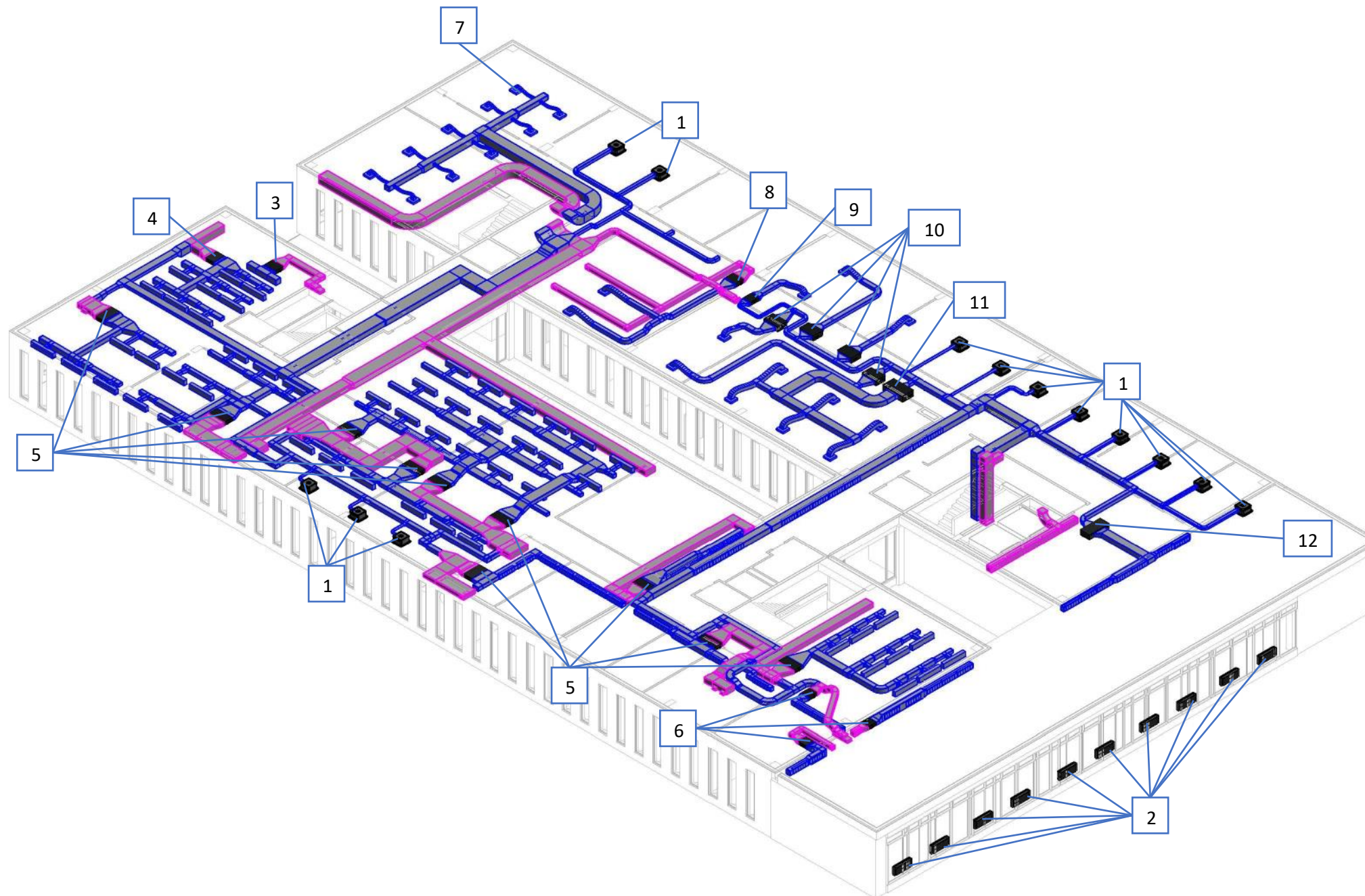
03

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SCALE

A3 1:200



■ IMPULSE AIR
■ RETURN AIR

1 FCL84 CASSETTE	13 units	4 FPM 224 FAN COIL	1 unit	7 TROX VDW AIR DIFFUSER	23 units	10 UTF-15 FAN COIL	4 units
2 FCX50 VERTICAL FAN COIL	10 units	5 FPM 234 FAN COIL	10 units	8 UTF-9 FAN COIL	1 unit	11 UTF-28 FAN COIL	1 unit
3 FPM AIR CURTAIN	1 unit	6 FPM 134 FAN COIL	3 units	9 FCXP50 FAN COIL	1 unit	12 UTF-21 FAN COIL	1 unit



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STUDY OF THE BIM MODELLING
PROCESS OF THE GAIA
BUILDING'S HVAC SYSTEM

LOWER FLOOR'S AIR DUCT
SYSTEM

AUTHOR

MARC VALIENTE GARCIA

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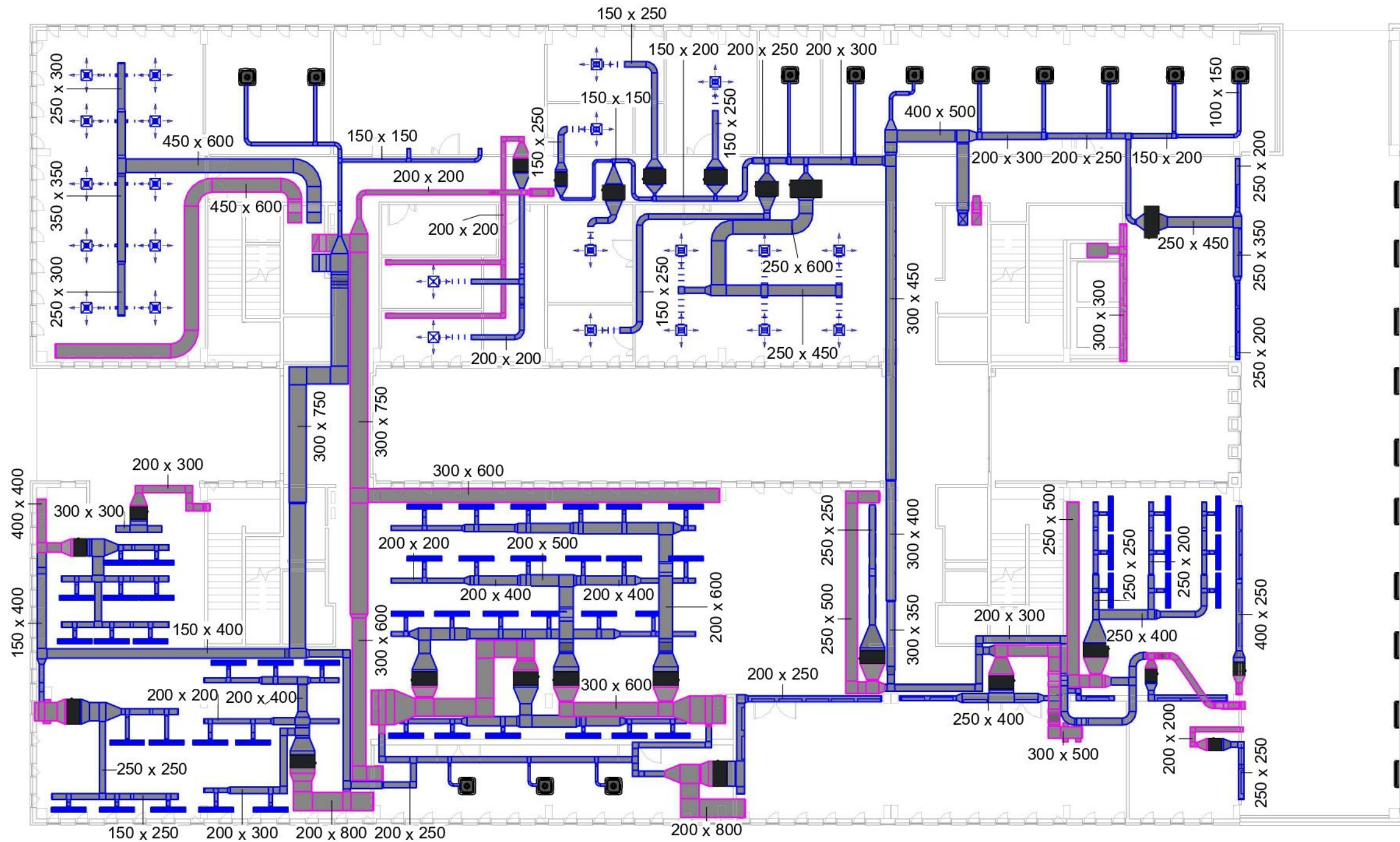
04



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 IMPULSE AIR
 RETURN AIR



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STUDY OF THE BIM MODELLING
 PROCESS OF THE GAIA
 BUILDING'S HVAC SYSTEM

LOWER FLOOR'S AIR DUCT
 SYSTEM – FLOOR PLAN

AUTHOR

MARC VALIENTE GARCIA

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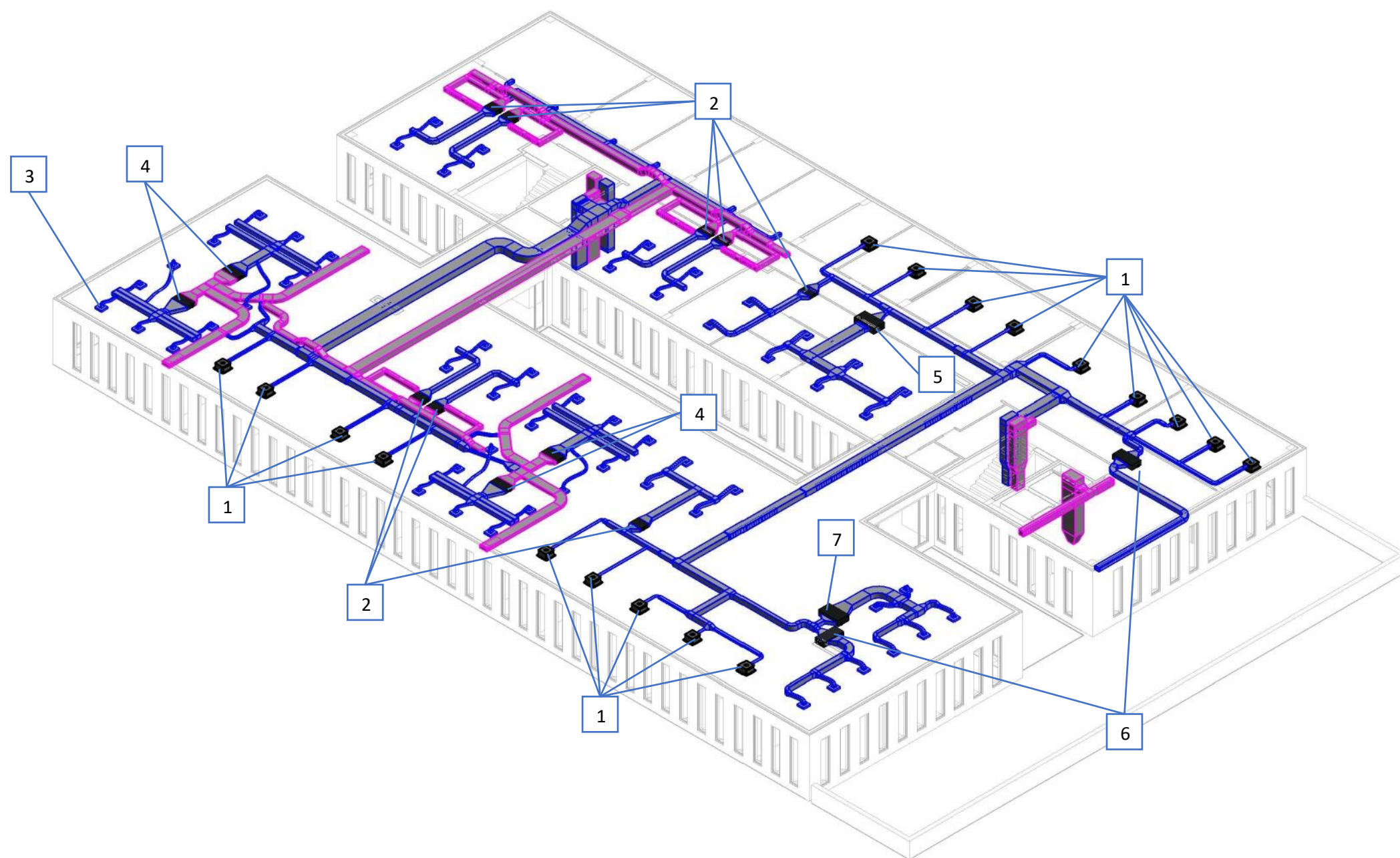
05

DATE

27/04/2020

SCALE

A3 1:200



<div>IMPULSE AIR</div> <div>RETURN AIR</div>	1	FCL84 CASSETTE	18 units	4	FPM 234 FAN COIL	4 units	7	UTF-37 FAN COIL	1 unit
	2	UTF-9 FAN COIL	8 units	5	UTF-28 FAN COIL	1 unit			
	3	TROX VDW AIR DIFFUSER	56 units	6	UTF-21 FAN COIL	2 units			



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STUDY OF THE BIM MODELLING
 PROCESS OF THE GAIA
 BUILDING'S HVAC SYSTEM

FIRST FLOOR'S AIR DUCT
 SYSTEM

AUTHOR

MARC VALIENTE GARCIA

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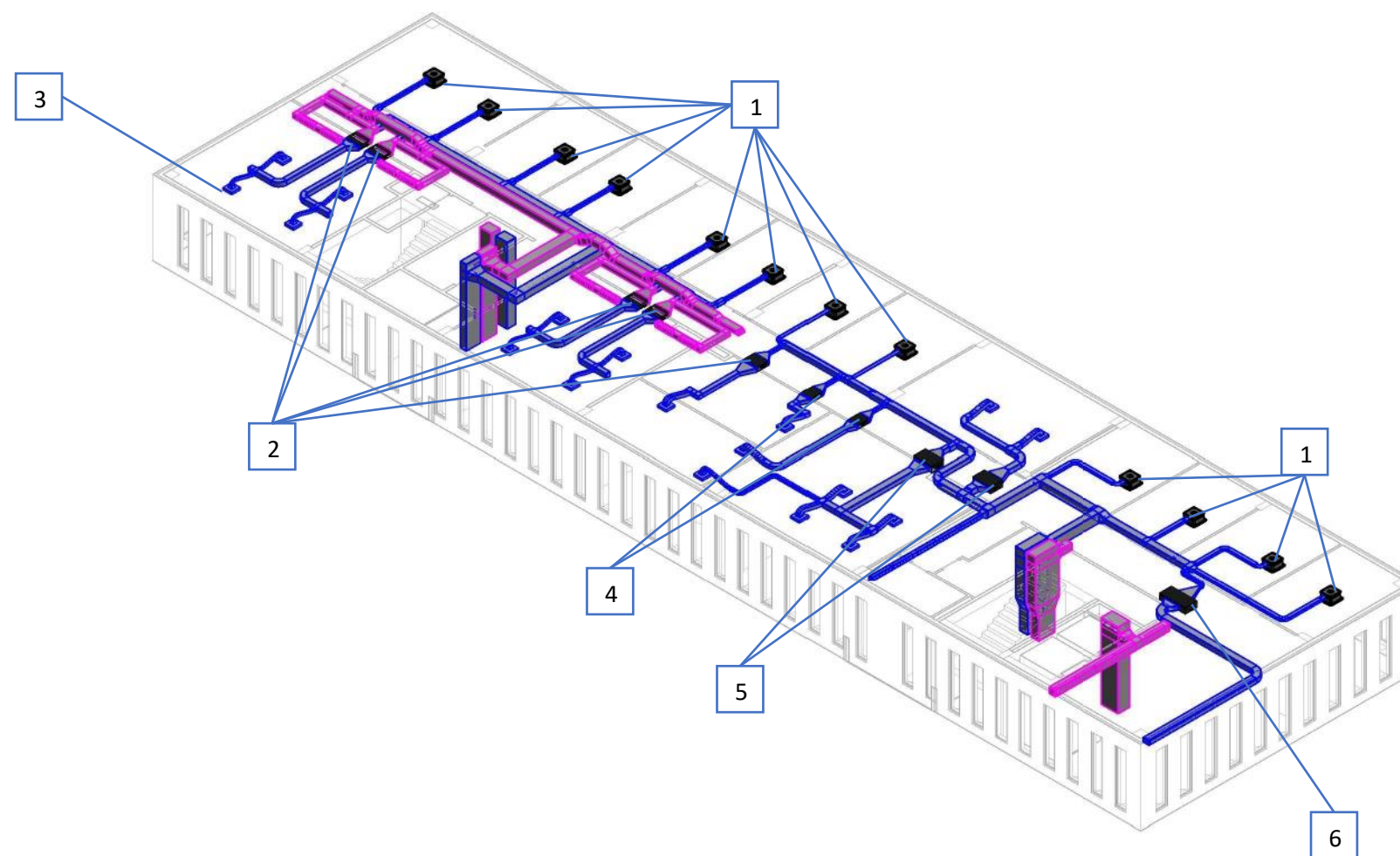
06

DATE

27/04/2020

SCALE

A3 1:250



<div>IMPULSE AIR</div> <div>RETURN AIR</div>	1	FCL84 CASSETTE	12 units	4	FCXP50 FAN COIL	2 units
	2	UTF-9 FAN COIL	5 units	5	UTF-15 FAN COIL	2 units
	3	TROX VDW AIR DIFFUSER	18 units	6	UTF-21 FAN COIL	1 unit



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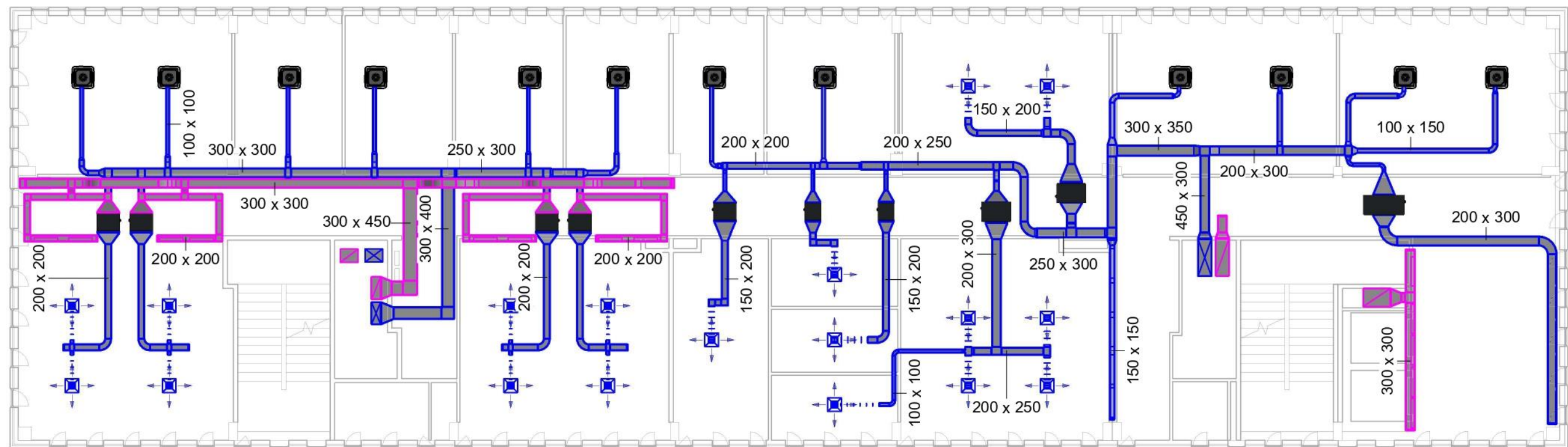
STUDY OF THE BIM MODELLING
 PROCESS OF THE GAIA
 BUILDING'S HVAC SYSTEM
 SECOND FLOOR'S AIR DUCT
 SYSTEM

AUTHOR
 MARC VALIENTE GARCIA

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 A3 1:250



- IMPULSE AIR
- RETURN AIR



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STUDY OF THE BIM MODELLING
PROCESS OF THE GAIA
BUILDING'S HVAC SYSTEM

SECOND FLOOR'S AIR DUCT
SYSTEM – FLOOR PLAN

AUTHOR

MARC VALIENTE GARCIA

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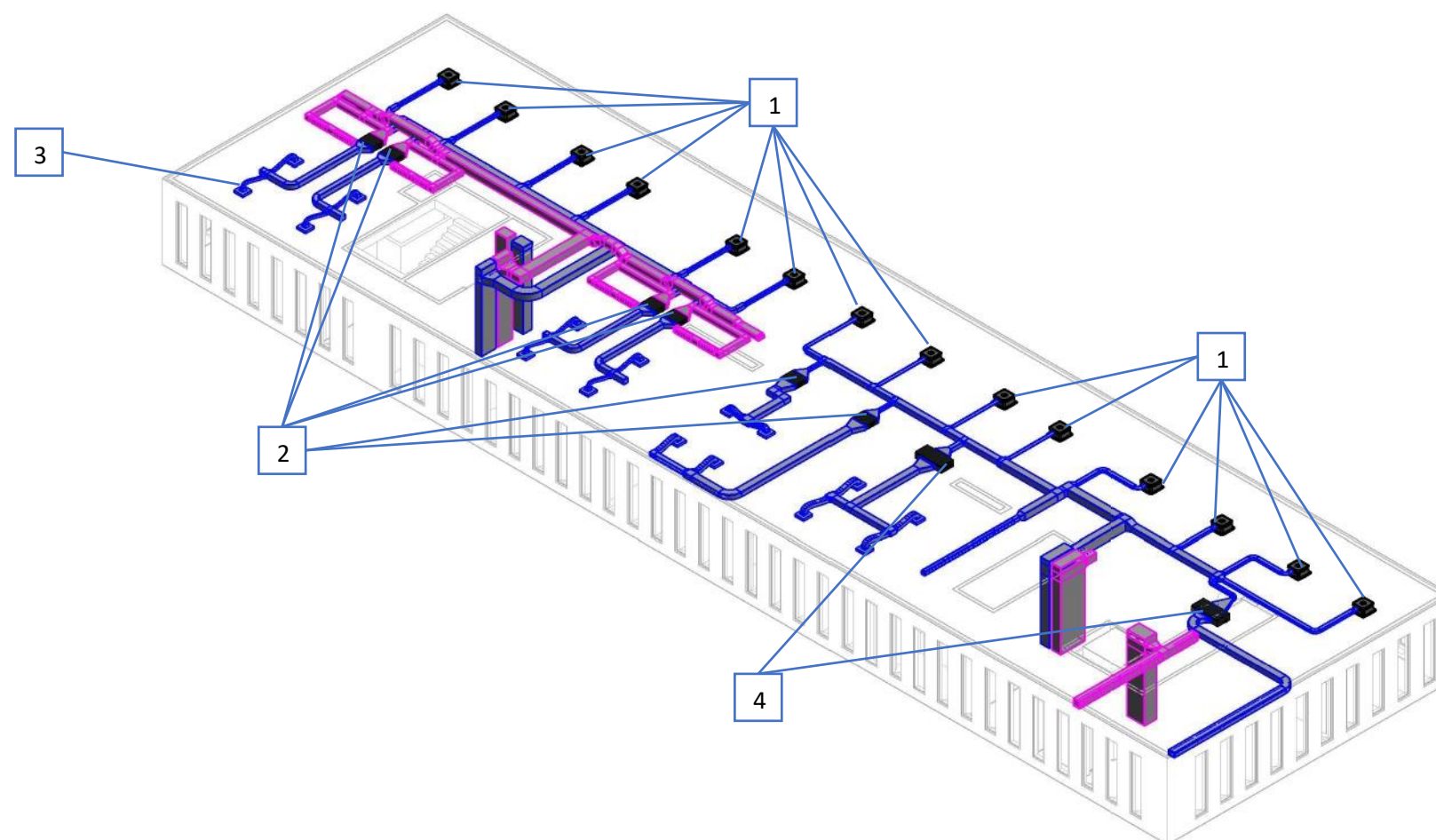
09

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SCALE

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■ IMPULSE AIR	1 FCL84 CASSETTE	14 units	4 UTF-21 FAN COIL	2 units
■ RETURN AIR	2 UTF-9 FAN COIL	6 units		
	3 TROX VDW AIR DIFFUSER	16 units		



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PROCESS OF THE GAIA
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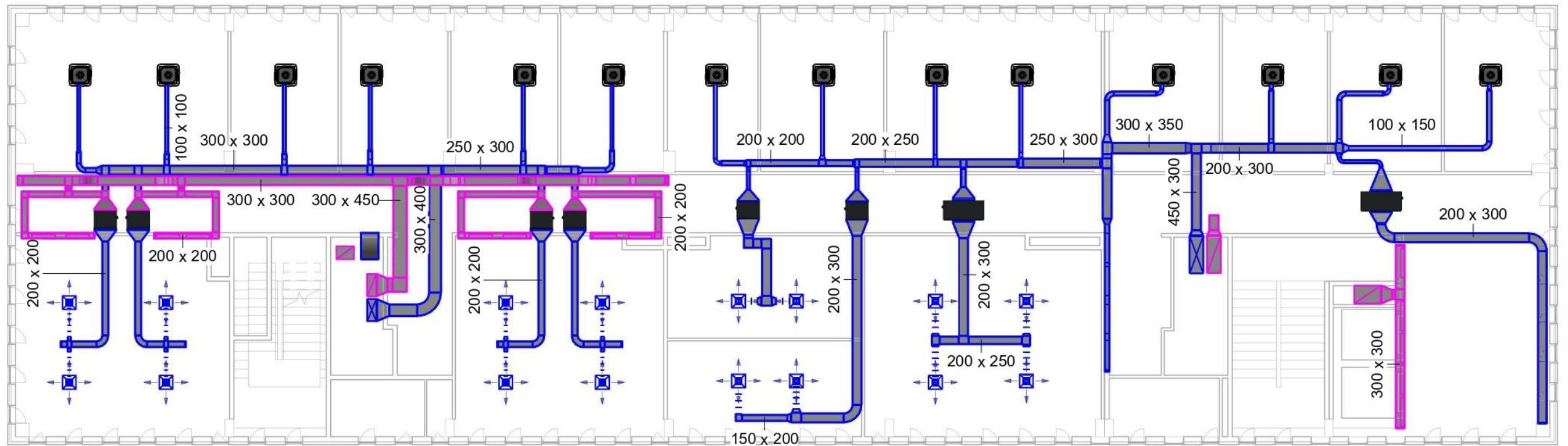
THIRD FLOOR'S AIR DUCT
SYSTEM

AUTHOR
MARC VALIENTE GARCIA

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■ IMPULSE AIR
■ RETURN AIR



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STUDY OF THE BIM MODELLING
PROCESS OF THE GAIA
BUILDING'S HVAC SYSTEM

THIRD FLOOR'S AIR DUCT
SYSTEM – FLOOR PLAN

AUTHOR

MARC VALIENTE GARCIA

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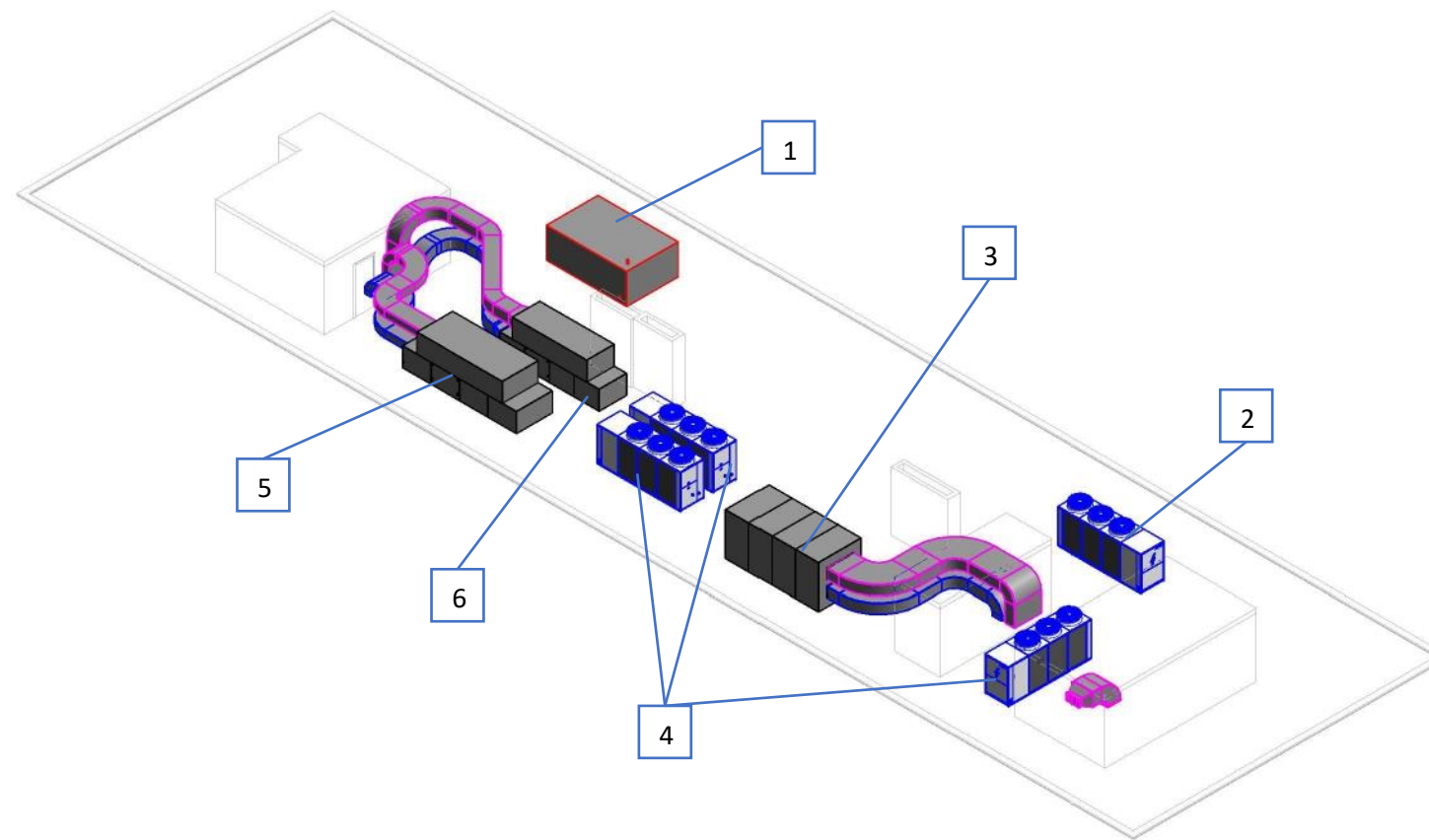
11

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<div style="display: inline-block; width: 10px; height: 10px; background-color: blue; margin-right: 5px;"></div> IMPULSE AIR	1	VITOCROSSAL 300 BOILER	1 unit	4	NRA 700 CHILLER	3 units
	2	NRA 650 CHILLER	1 unit	5	AIRLAN AHU 1	1 unit
	3	CL-01 AHU	1 unit	6	AIRLAN AHU 2	1 unit
<div style="display: inline-block; width: 10px; height: 10px; background-color: purple; margin-right: 5px;"></div> RETURN AIR						



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STUDY OF THE BIM MODELLING
 PROCESS OF THE GAIA
 BUILDING'S HVAC SYSTEM

ROOFTOP'S AIR DUCT SYSTEM

AUTHOR

MARC VALIENTE GARCIA

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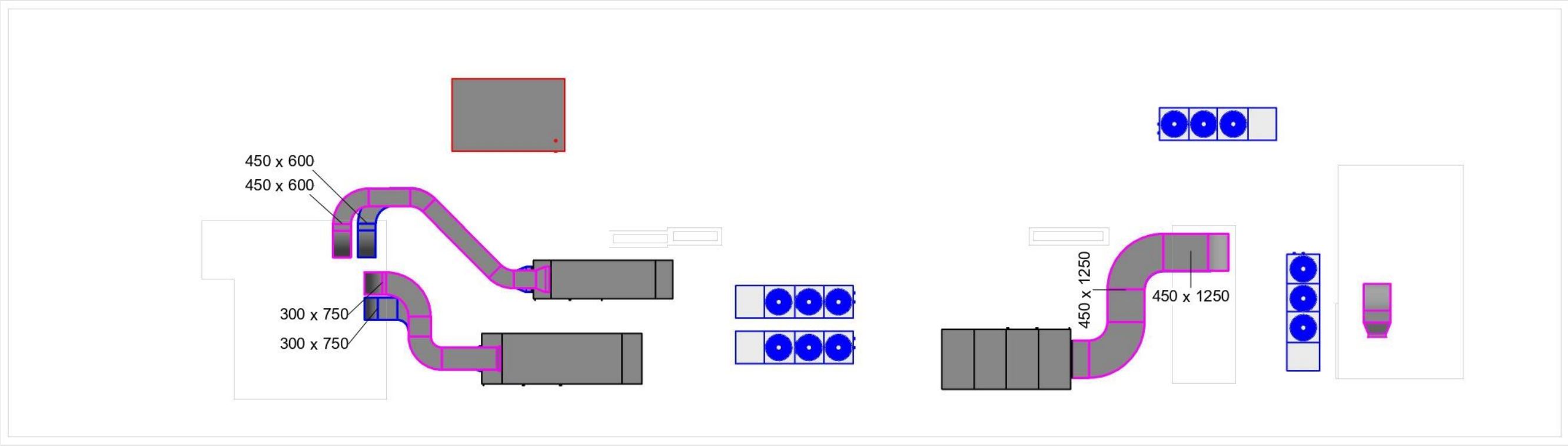
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■ IMPULSE AIR
■ RETURN AIR



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STUDY OF THE BIM MODELLING
PROCESS OF THE GAIA
BUILDING'S HVAC SYSTEM

ROOFTOP'S AIR DUCT SYSTEM –
FLOOR PLAN

AUTHOR

MARC VALIENTE GARCIA

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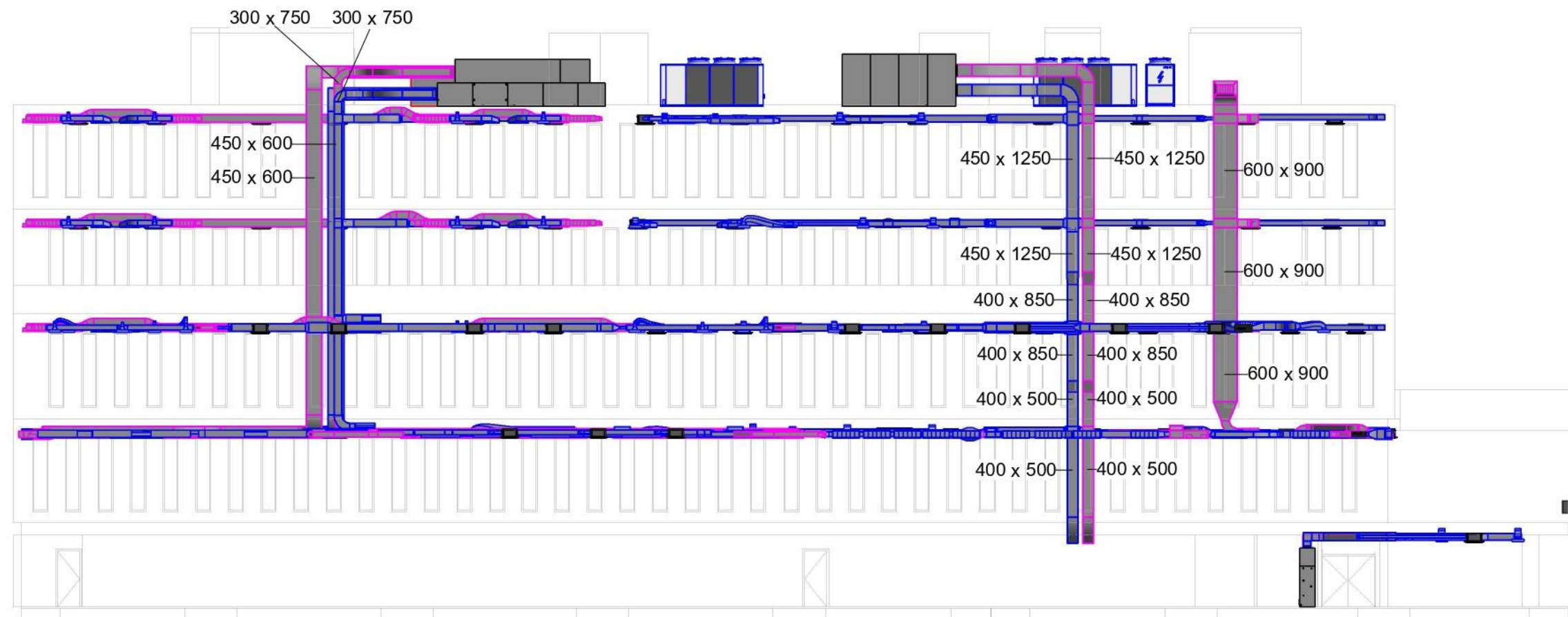
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■ IMPULSE AIR
■ RETURN AIR



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STUDY OF THE BIM MODELLING
PROCESS OF THE GAIA
BUILDING'S HVAC SYSTEM

ROOFTOP'S AIR DUCT SYSTEM –
SOUTH ELEVATION PLAN

AUTHOR

MARC VALIENTE GARCIA

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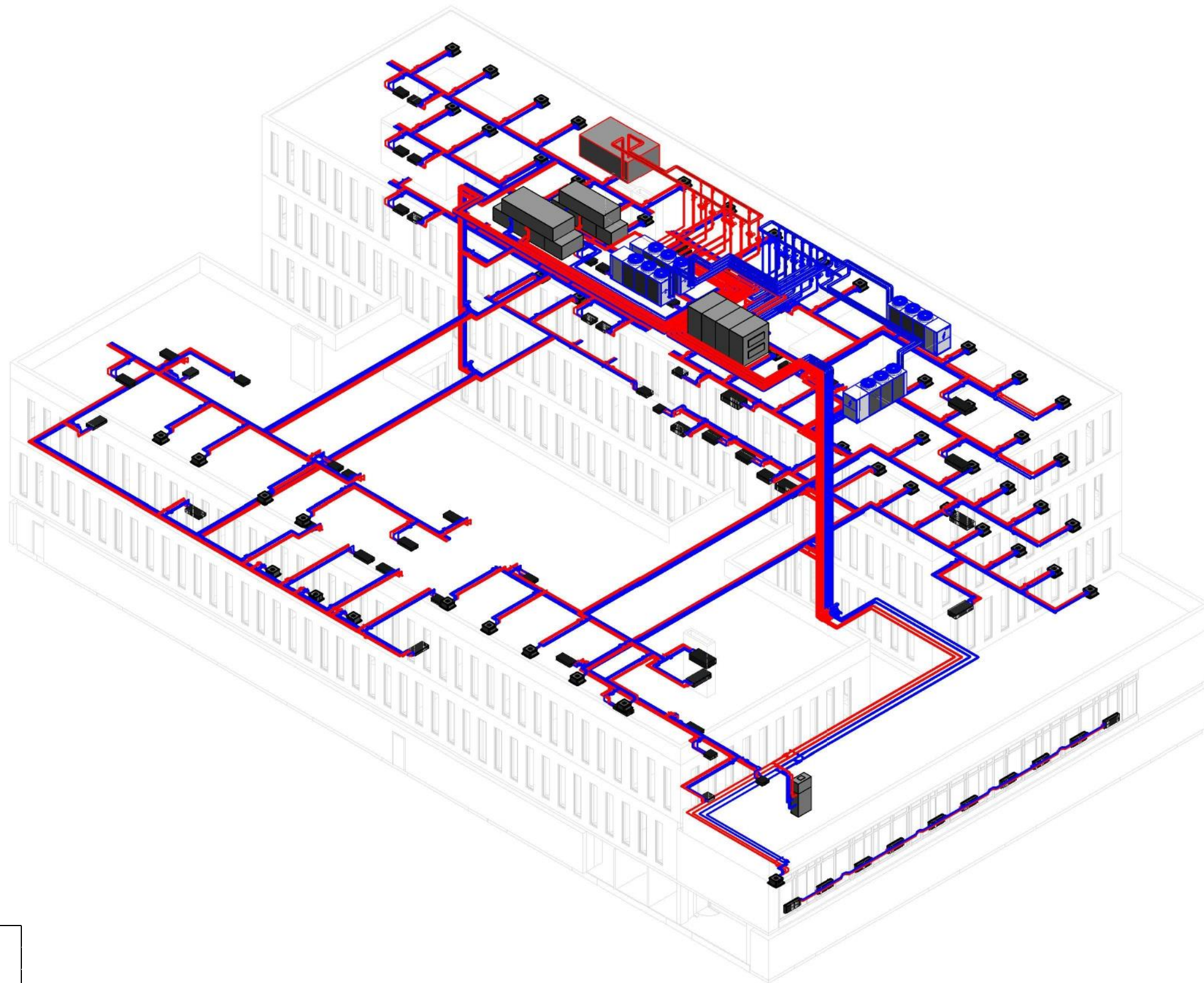
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■ COOLED WATER PIPE
■ HEATED WATER PIPE



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STUDY OF THE BIM MODELLING
 PROCESS OF THE GAIA
 BUILDING'S HVAC SYSTEM

GENERAL VIEW OF THE PIPING
 SYSTEM

AUTHOR

MARC VALIENTE GARCIA

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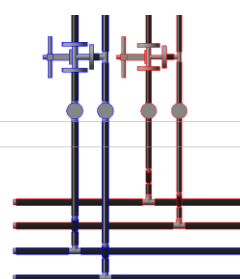
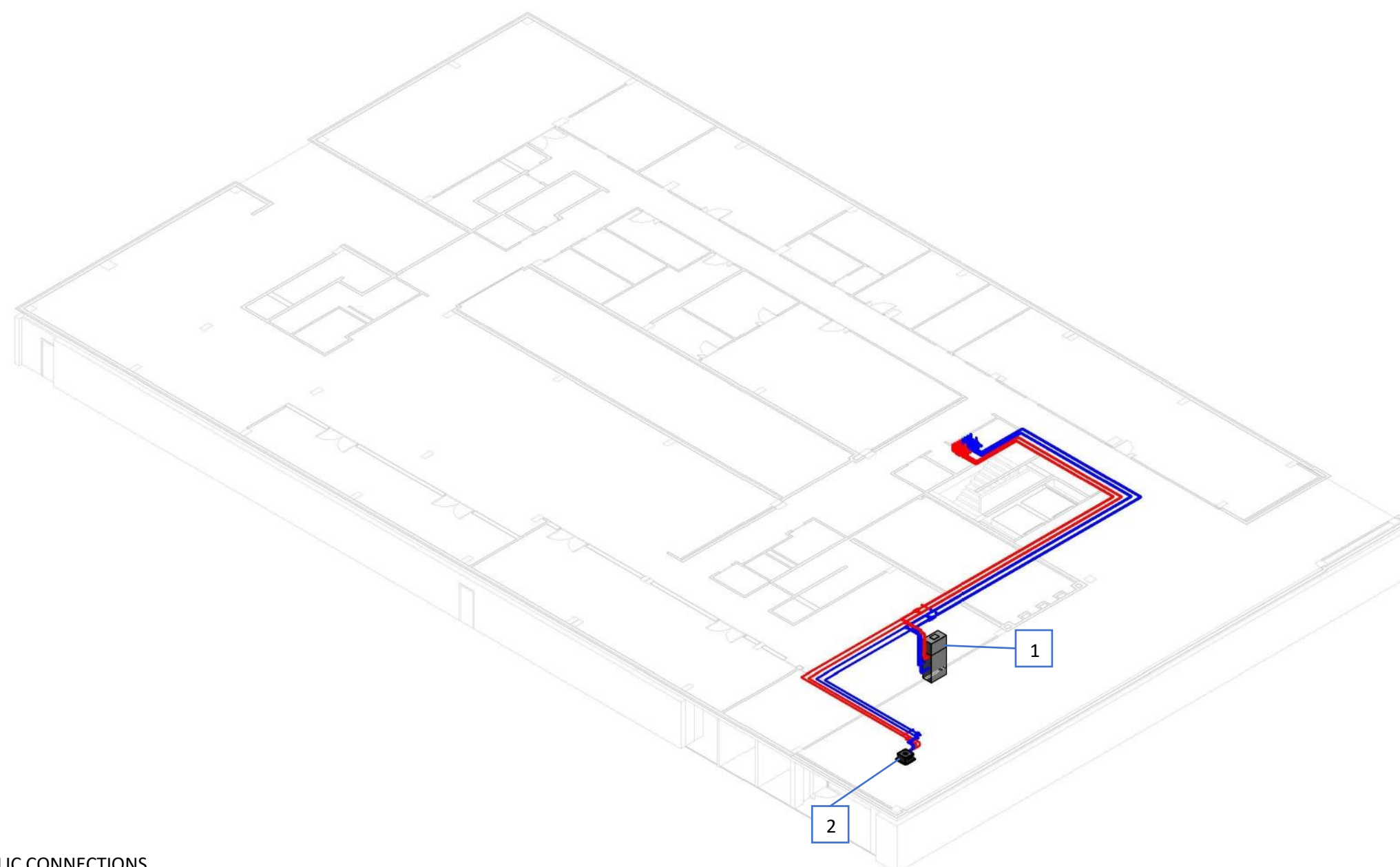
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*DETAIL OF THE FAN COIL'S HIDRAULIC CONNECTIONS

- | | | | | |
|--|-------------------|---|----------------|--------|
|  | COOLED WATER PIPE | 1 | CTA-3 FAN COIL | 1 unit |
|  | HEATED WATER PIPE | 2 | FCL84 CASSETTE | 1 unit |



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STUDY OF THE BIM MODELLING
PROCESS OF THE GAIA
BUILDING'S HVAC SYSTEM

BASEMENT'S PIPING SYSTEM

AUTHOR

MARC VALIENTE GARCIA

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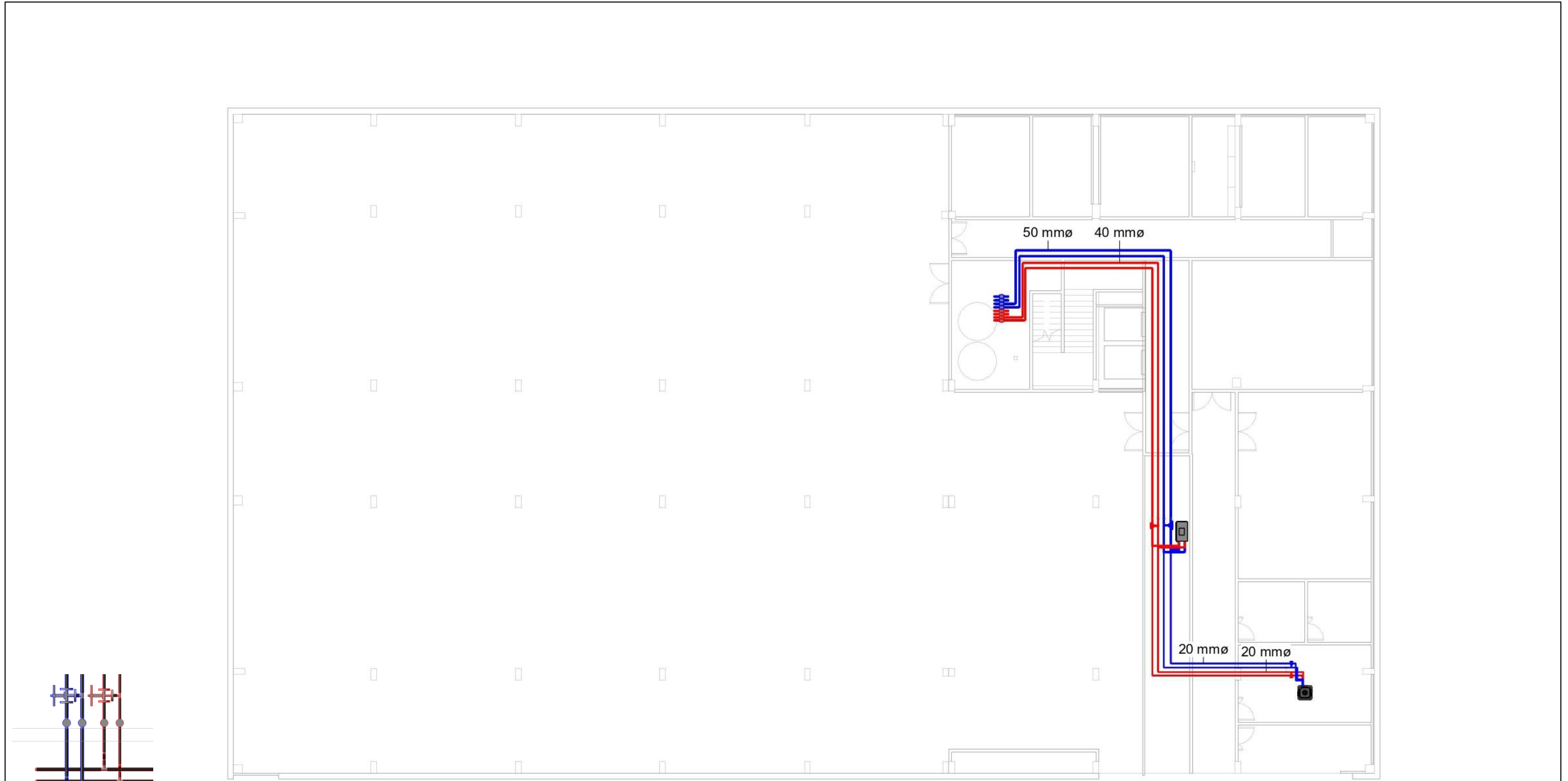
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A3 1:250

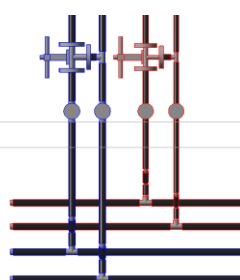
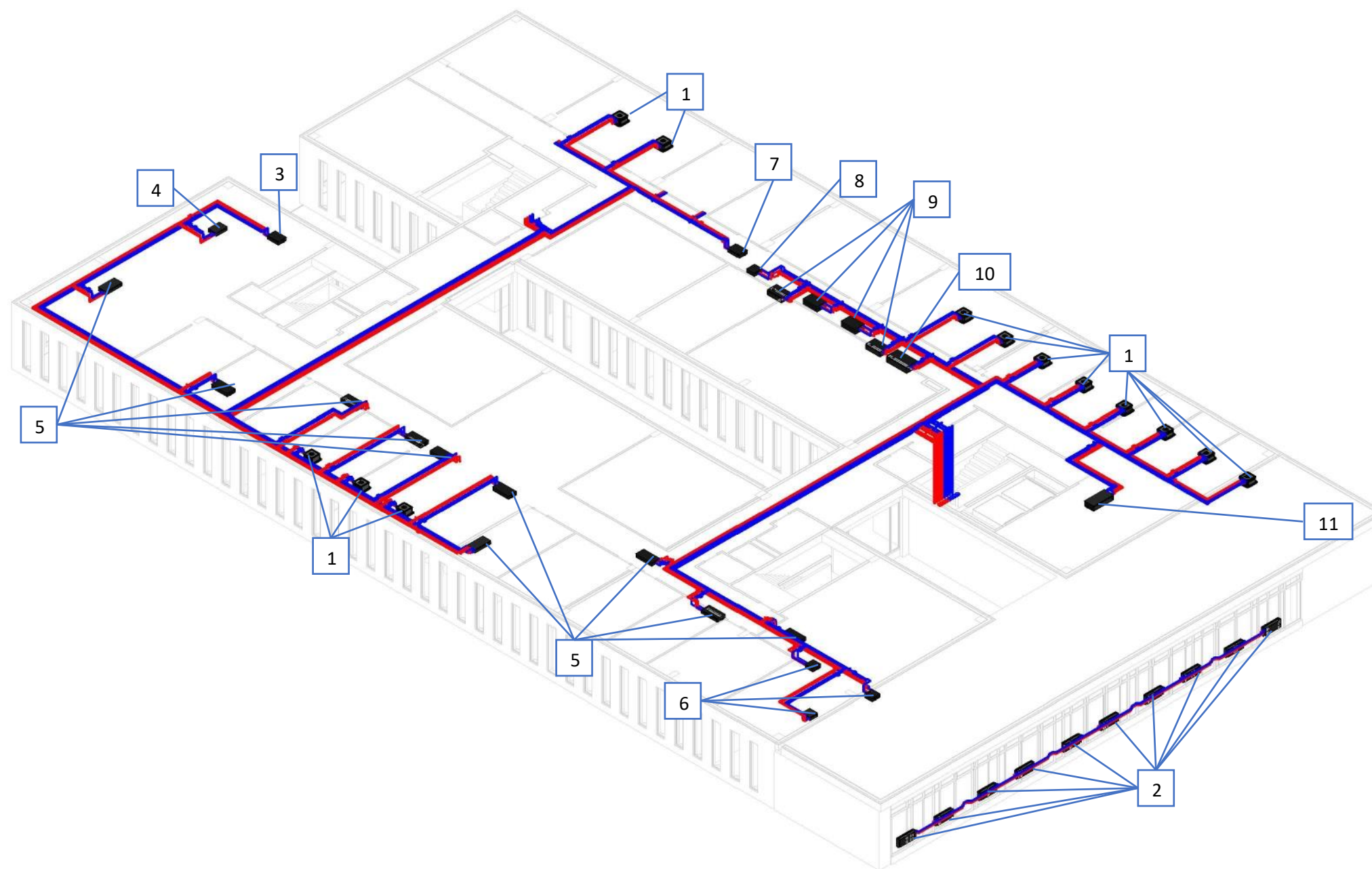


*DETAIL OF THE FAN COIL'S HIDRAULIC CONNECTIONS

COOLED WATER PIPE

HEATED WATER PIPE

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	BASEMENT'S PIPING SYSTEM – FLOOR PLAN				



*DETAIL OF THE FAN COIL'S HIDRAULIC CONNECTIONS

<div>COOLED WATER PIPE</div> <div>HEATED WATER PIPE</div>	1	FCL84 CASSETTE	13 units	4	FPM 224 FAN COIL	1 unit	7	UTF-9 FAN COIL	1 unit	10	UTF-28 FAN COIL	1 unit
	2	FCX50 VERTICAL FAN COIL	10 units	5	FPM 234 FAN COIL	10 units	8	FCXP50 FAN COIL	1 unit	11	UTF-21 FAN COIL	1 unit
	3	FPM AIR CURTAIN	1	6	FPM 134 FAN COIL	3 units	9	UTF-15 FAN COIL	4 units			



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STUDY OF THE BIM MODELLING
PROCESS OF THE GAIA
BUILDING'S HVAC SYSTEM

LOWER FLOOR'S PIPING
SYSTEM

AUTHOR

MARC VALIENTE GARCIA

PLAN Nº

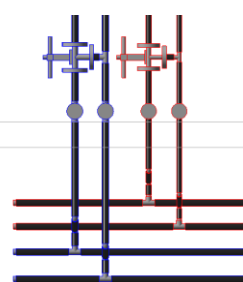
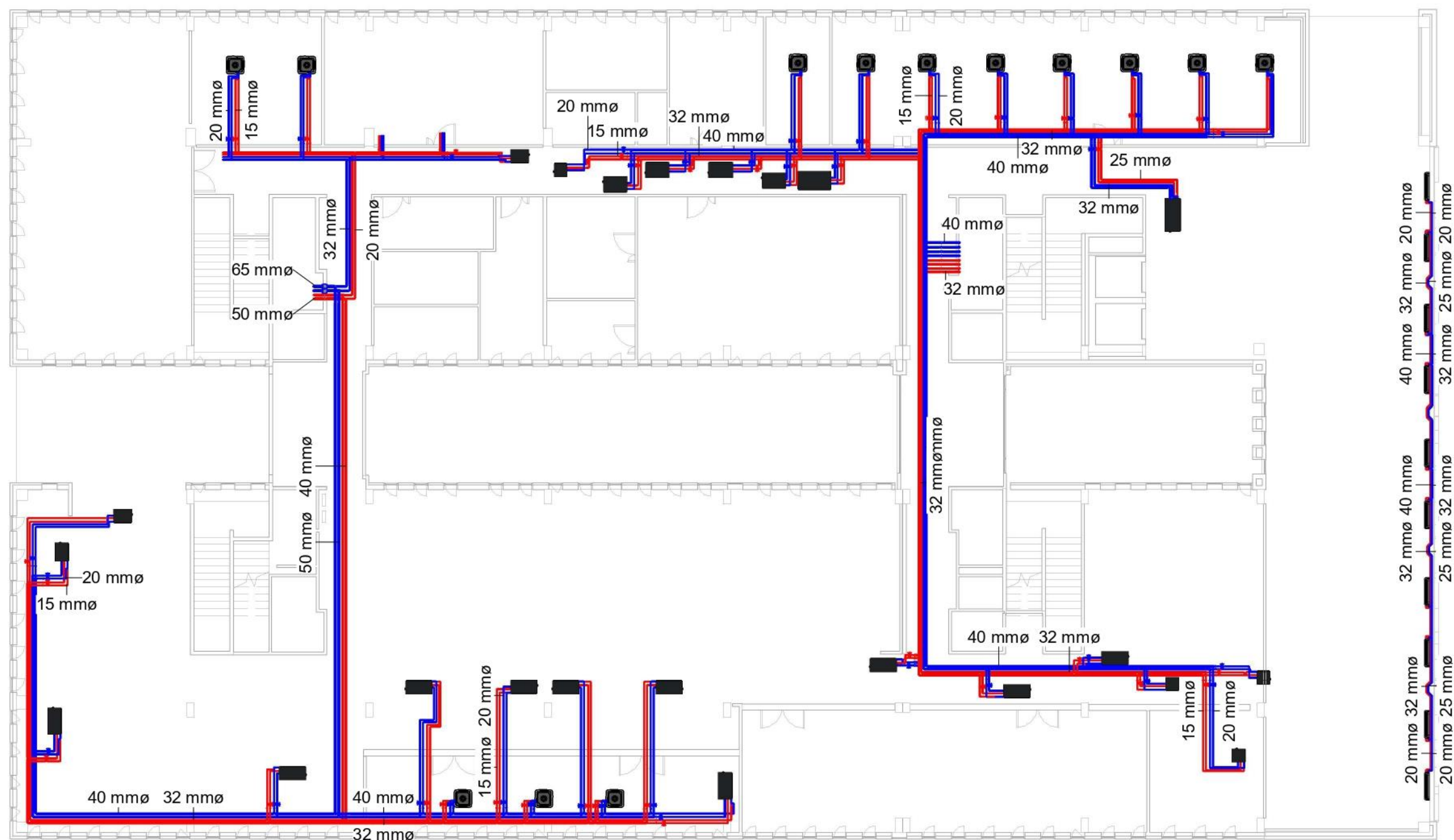
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*DETAIL OF THE FAN COIL'S HIDRAULIC CONNECTIONS

- COOLED WATER PIPE
- HEATED WATER PIPE



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STUDY OF THE BIM MODELLING
PROCESS OF THE GAIA
BUILDING'S HVAC SYSTEM

LOWER FLOOR'S PIPING
SYSTEM – FLOOR PLAN

AUTHOR

MARC VALIENTE GARCIA

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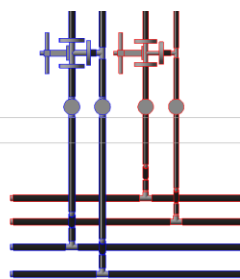
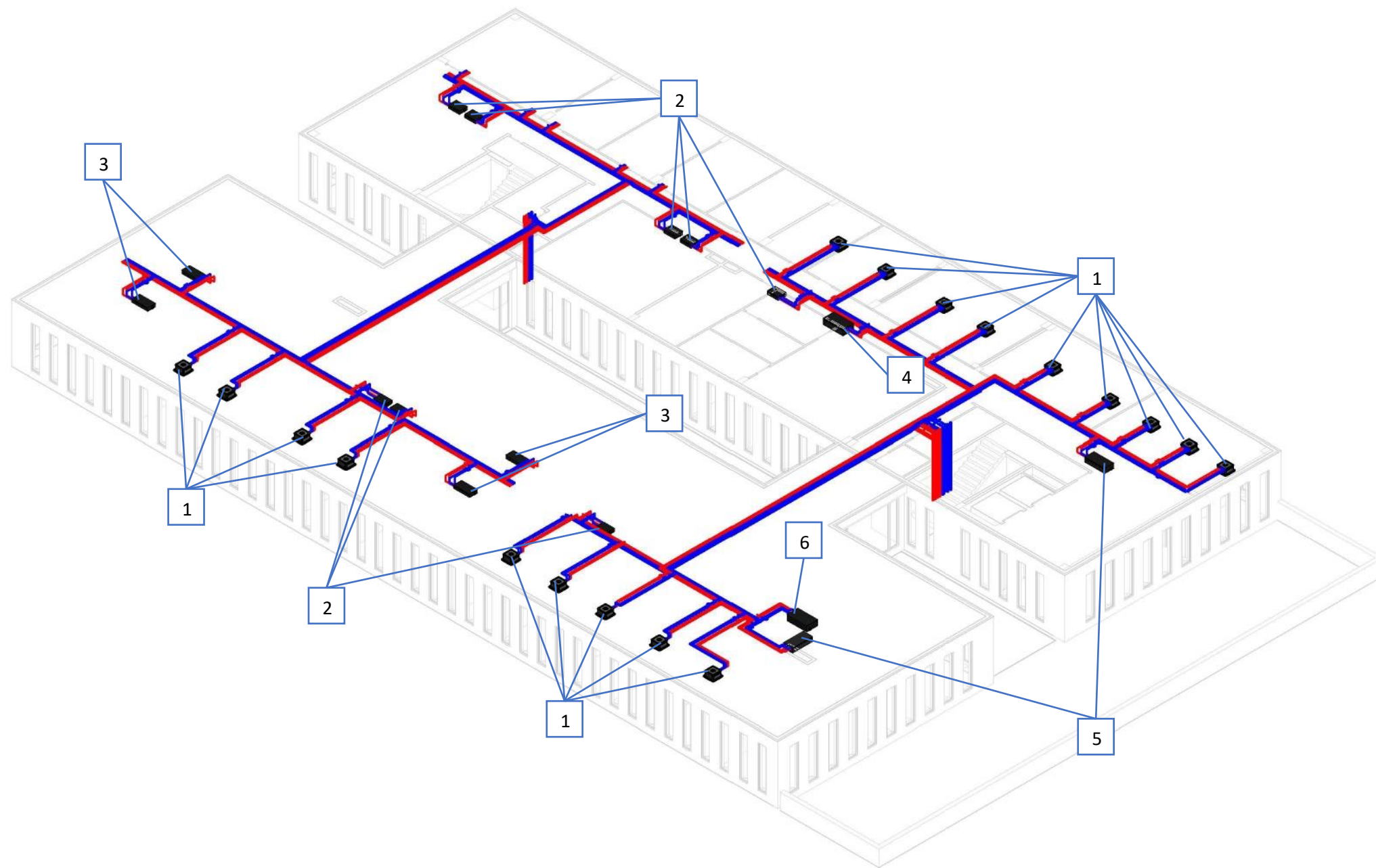
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*DETAIL OF THE FAN COIL'S HIDRAULIC CONNECTIONS

<div style="display: inline-block; width: 10px; height: 10px; background-color: blue; margin-right: 5px;"></div> COOLED WATER PIPE	1	FCL84 CASSETTE	18 units	4	UTF-28 FAN COIL	1 unit
	2	UTF-9 FAN COIL	8 units	5	UTF-21 FAN COIL	2 units
<div style="display: inline-block; width: 10px; height: 10px; background-color: red; margin-right: 5px;"></div> HEATED WATER PIPE	3	FPM 234 FAN COIL	4 units	6	UTF-37 FAN COIL	1 unit



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STUDY OF THE BIM MODELLING
 PROCESS OF THE GAIA
 BUILDING'S HVAC SYSTEM

FIRST FLOOR'S PIPING SYSTEM

AUTHOR

MARC VALIENTE GARCIA

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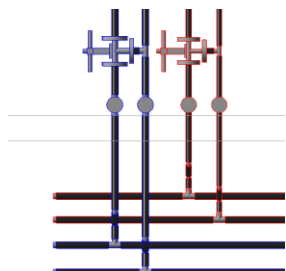
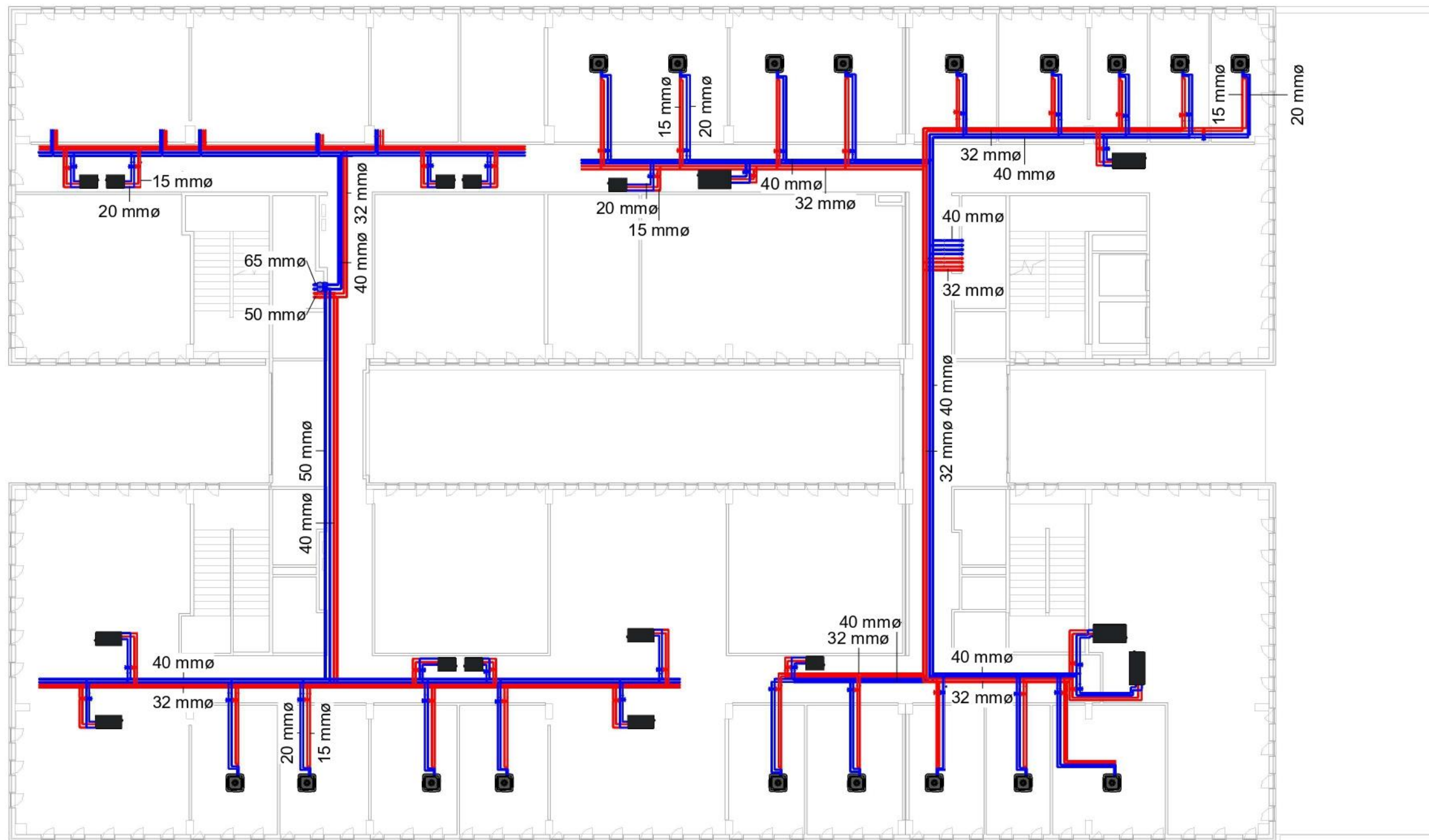
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*DETAIL OF THE FAN COIL'S HIDRAULIC CONNECTIONS

- COOLED WATER PIPE
- HEATED WATER PIPE



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PROCESS OF THE GAIA
BUILDING'S HVAC SYSTEM

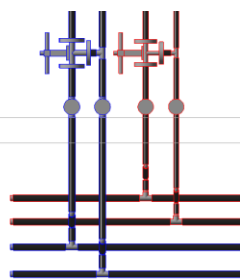
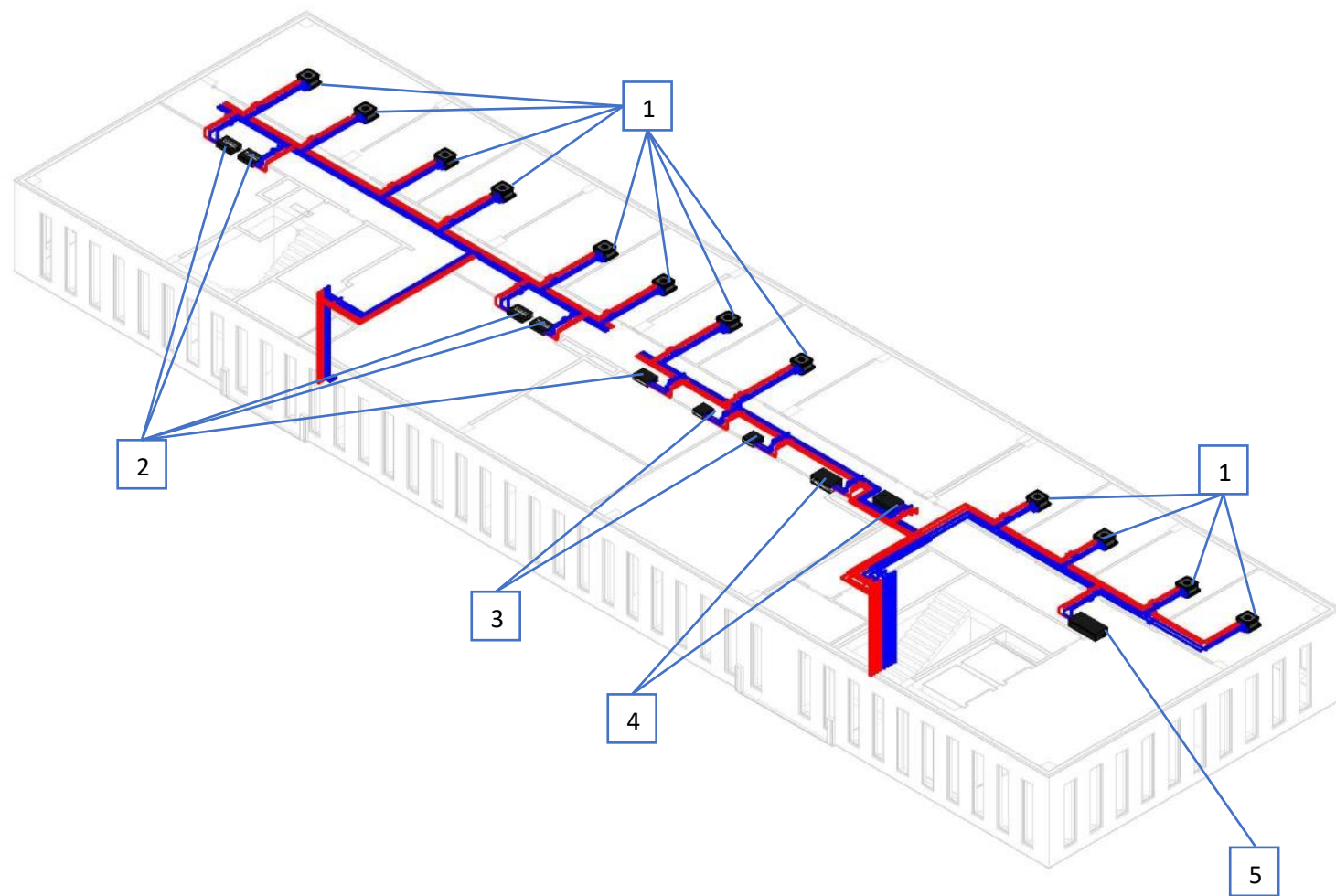
FIRST FLOOR'S PIPING SYSTEM –
FLOOR PLAN

AUTHOR
MARC VALIENTE GARCIA

PLAN Nº
21

DATE
27/04/2020

SCALE
A3 1:200



*DETAIL OF THE FAN COIL'S HIDRAULIC CONNECTIONS

<div></div> COOLED WATER PIPE	1	FCL84 CASSETTE	12 units	4	UTF-15 FAN COIL	2 units
	2	UTF-9 FAN COIL	5 units	5	UTF-21 FAN COIL	1 unit
<div></div> HEATED WATER PIPE	3	FCXP50 FAN COIL	2 units			



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STUDY OF THE BIM MODELLING
 PROCESS OF THE GAIA
 BUILDING'S HVAC SYSTEM

SECOND FLOOR'S PIPING
 SYSTEM

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MARC VALIENTE GARCIA

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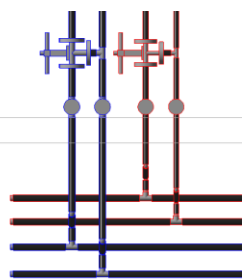
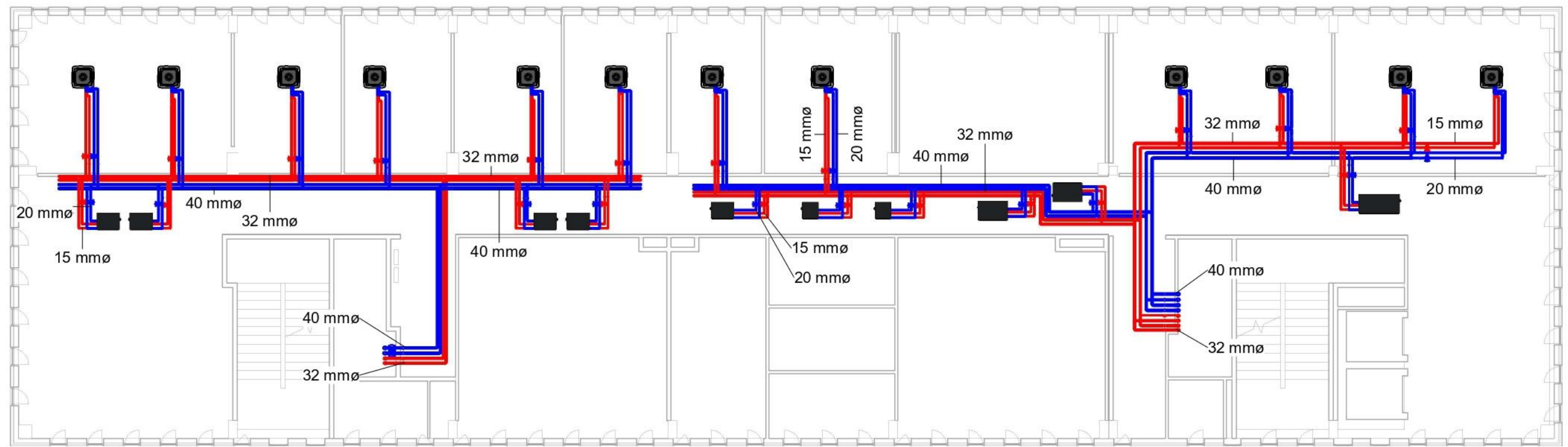
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*DETAIL OF THE FAN COIL'S HIDRAULIC CONNECTIONS

- COOLED WATER PIPE
- HEATED WATER PIPE



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 PROCESS OF THE GAIA
 BUILDING'S HVAC SYSTEM

SECOND FLOOR'S PIPING
 SYSTEM – FLOOR PLAN

AUTHOR

MARC VALIENTE GARCIA

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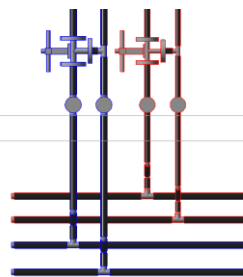
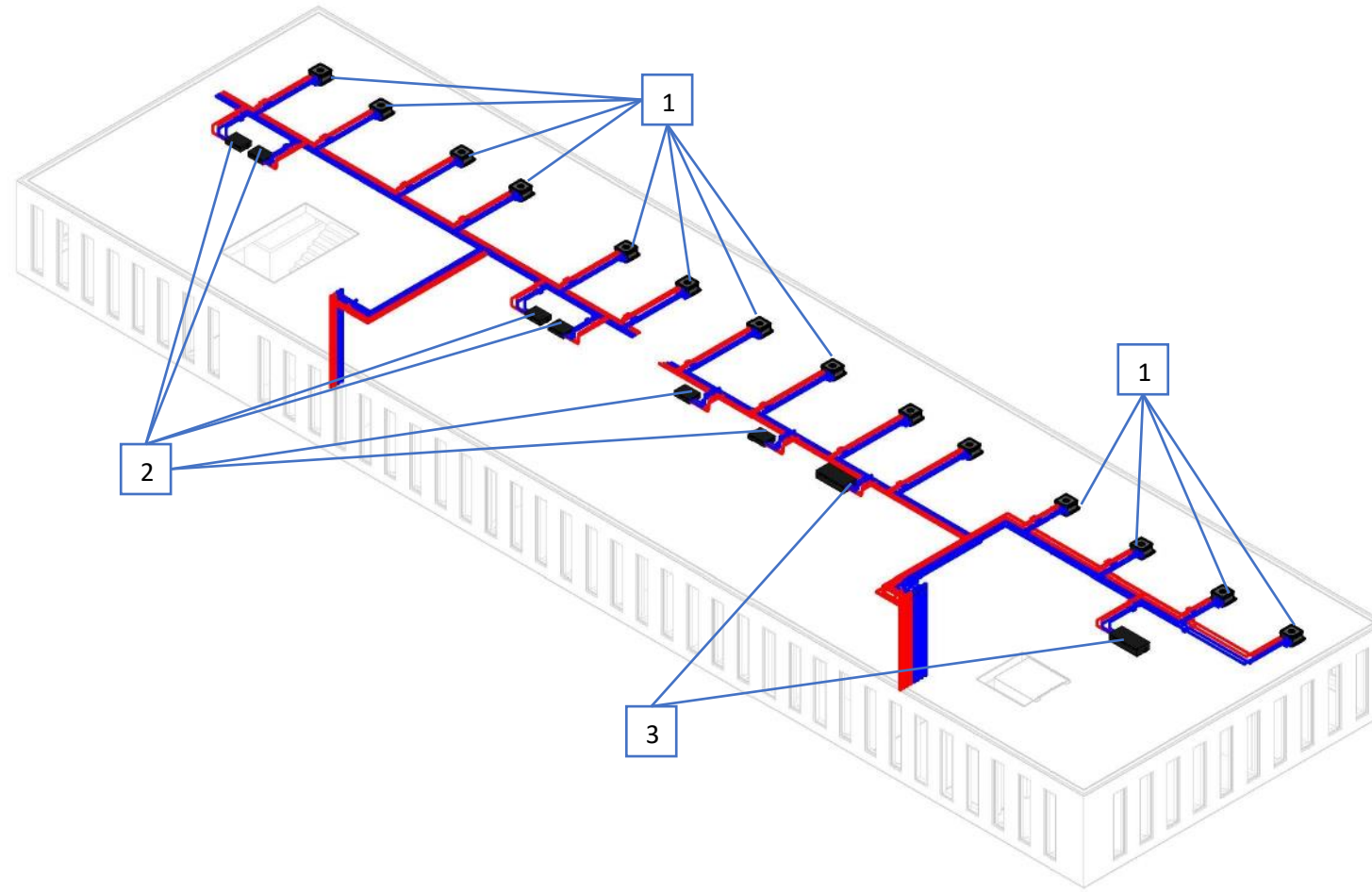
23

DATE

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SCALE

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*DETAIL OF THE FAN COIL'S HIDRAULIC CONNECTIONS

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	2 UTF-9 FAN COIL	6 units
<div style="display: inline-block; width: 10px; height: 10px; background-color: red; margin-right: 5px;"></div> HEATED WATER PIPE	3 UTF-21 FAN COIL	2 units



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STUDY OF THE BIM MODELLING
 PROCESS OF THE GAIA
 BUILDING'S HVAC SYSTEM

THIRD FLOOR'S PIPING SYSTEM

AUTHOR

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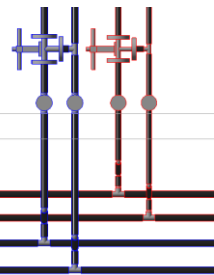
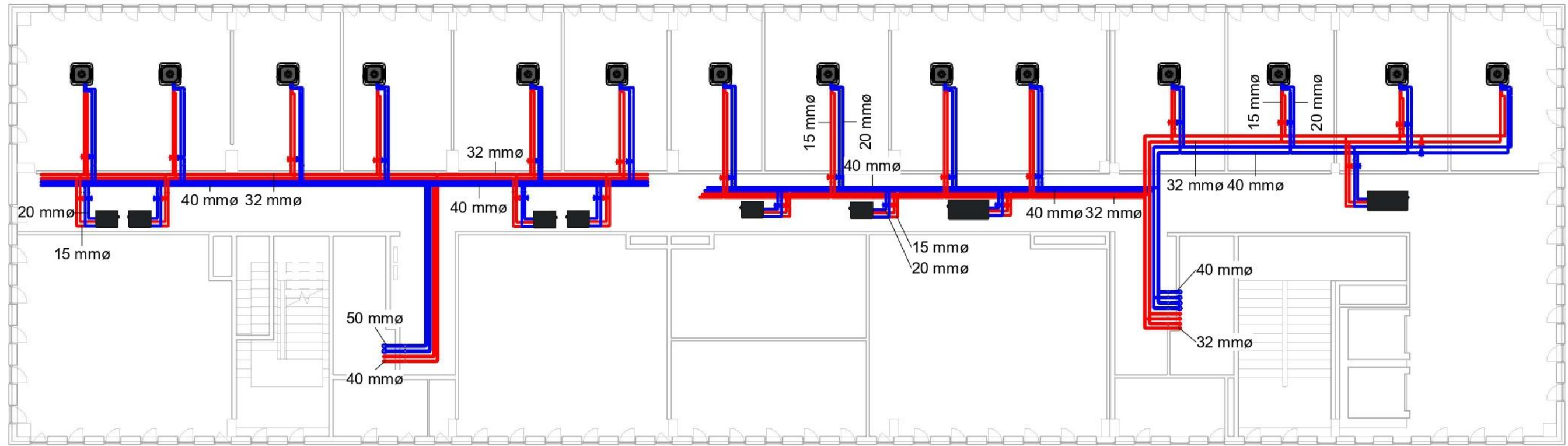
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*DETAIL OF THE FAN COIL'S HIDRAULIC CONNECTIONS

- COOLED WATER PIPE
- HEATED WATER PIPE



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 PROCESS OF THE GAIA
 BUILDING'S HVAC SYSTEM

THIRD FLOOR'S PIPING SYSTEM
 – FLOOR PLAN

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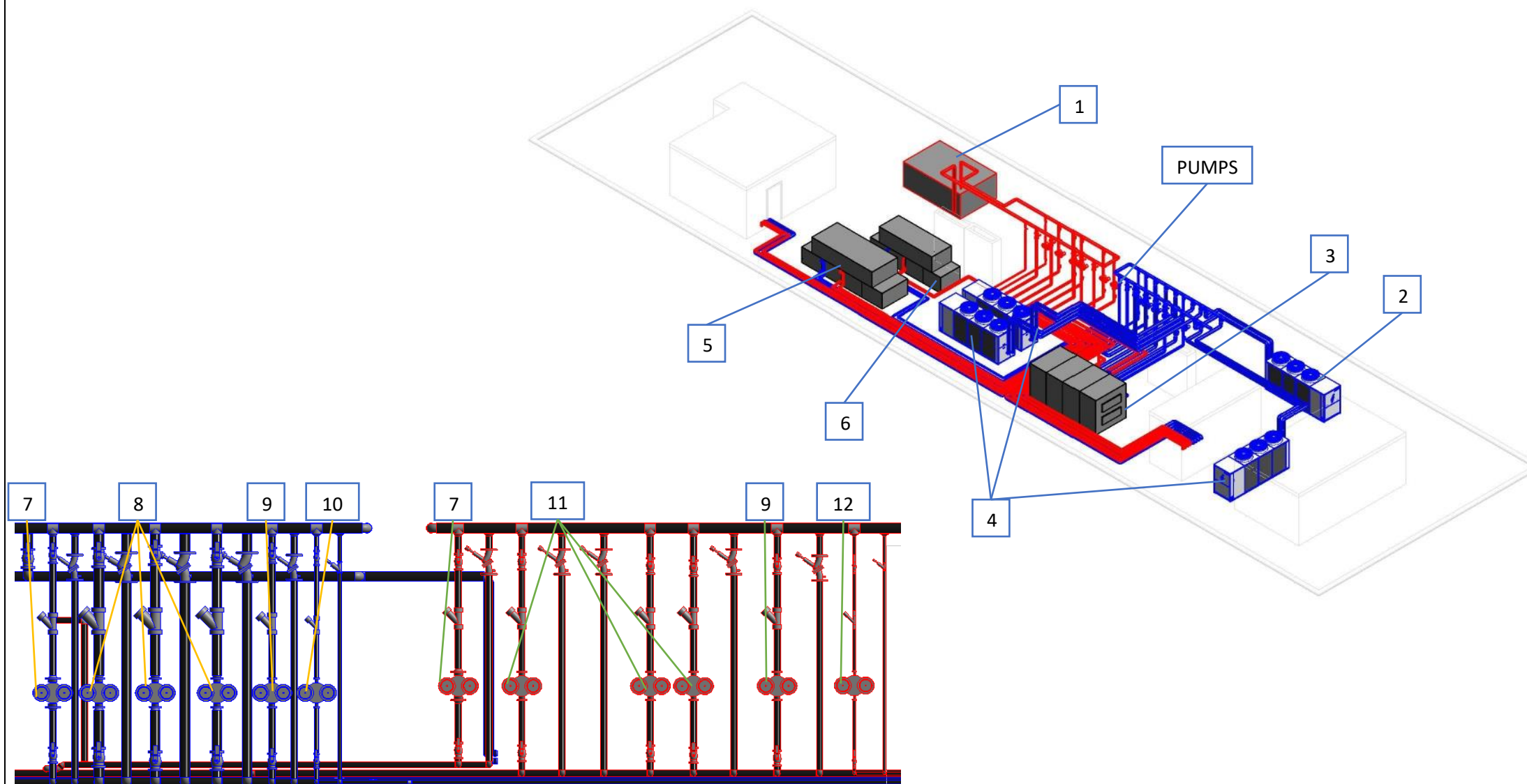
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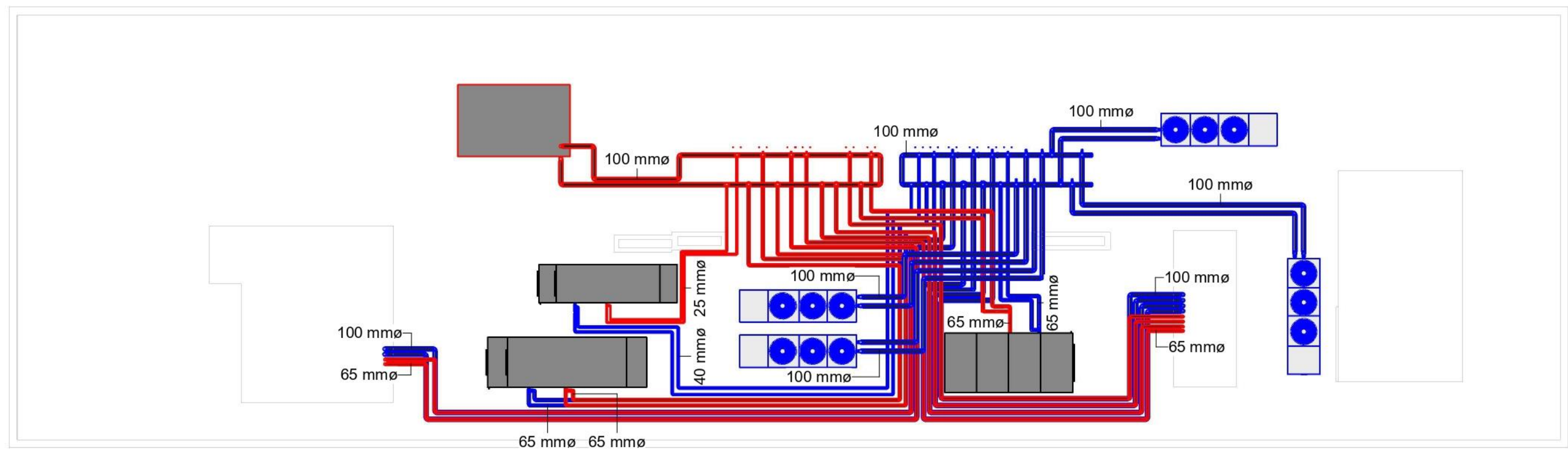
A3 1:150



*DETAILED VIEW OF THE PUMPS

<div>COOLED WATER PIPE</div> <div>HEATED WATER PIPE</div>	1	VITOCROSSAL 300 BOILER	1 unit	4	NRA 700 CHILLER	3 units	7	DPL 100/135 PUMP	2 units	10	DPL 40/115 PUMP	1 unit
	2	NRA 650 CHILLER	1 unit	5	AIRLAN AHU 1	1 unit	8	DPL 80/115 PUMP	3 units	11	DPL 65/120 PUMP	3 units
	3	CL-01 AHU	1 unit	6	AIRLAN AHU 2	1 unit	9	DPL 65/170 PUMP	2 units	12	IPL 25/90 PUMP	1 unit

STUDY OF THE BIM MODELLING PROCESS OF THE GAIA BUILDING'S HVAC SYSTEM	AUTHOR	PLAN Nº	DATE	SCALE
ROOFTOP'S PIPING SYSTEM	MARC VALIENTE GARCIA	26	27/04/2020	A3 1:250



■ COOLED WATER PIPE
■ HEATED WATER PIPE



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STUDY OF THE BIM MODELLING
 PROCESS OF THE GAIA
 BUILDING'S HVAC SYSTEM

ROOFTOP'S PIPING SYSTEM –
 FLOOR PLAN

AUTHOR

MARC VALIENTE GARCIA

PLAN Nº

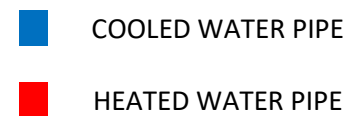
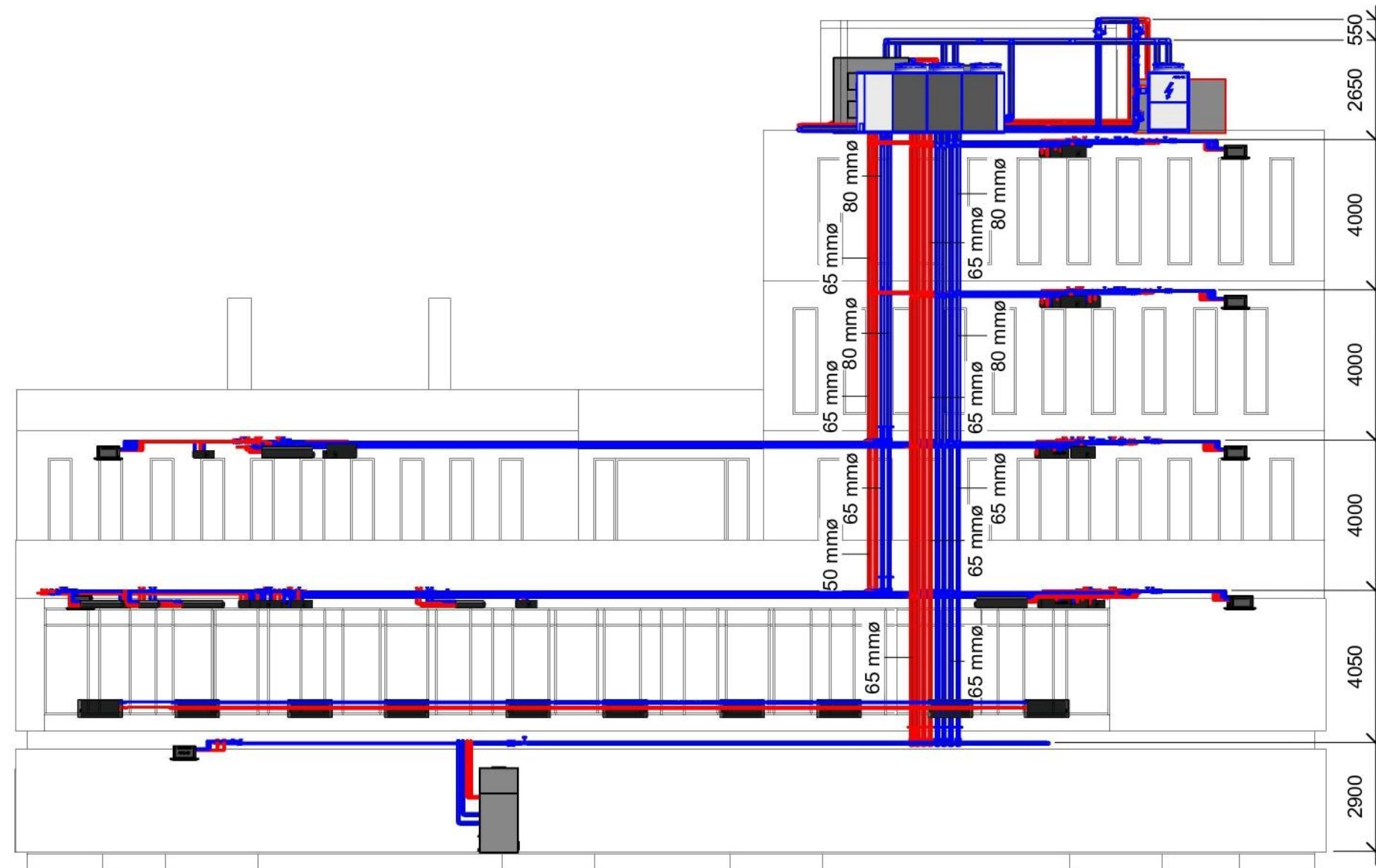
27

DATE

27/04/2020

SCALE

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STUDY OF THE BIM MODELLING
 PROCESS OF THE GAIA
 BUILDING'S HVAC SYSTEM

ROOFTOP'S PIPING SYSTEM –
 EAST ELEVATION PLAN

AUTHOR

MARC VALIENTE GARCIA

PLAN Nº

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DATE

27/04/2020

SCALE

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